



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/914,172 | 08/24/2001 | Fabrice Romain | 98R021254297 | 1985 |

27975 7590 10/04/2005

ALLEN, DYER, DOPPELT, MILBRATH & GILCHRIST P.A.
1401 CITRUS CENTER 255 SOUTH ORANGE AVENUE
P.O. BOX 3791
ORLANDO, FL 32802-3791

EXAMINER

TRAN, TONGOC

ART UNIT PAPER NUMBER

2134

DATE MAILED: 10/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/914,172

Applicant(s)

ROMAIN, FABRICE

Examiner

Tongoc Tran

Art Unit

2134

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 August 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. This office action is in response to Applicant's application serial no. 09/914,172 filed on 8/24/2001. In preliminary amendment, filed on 8/24/2001, claims 1-6 have been cancelled. Claims 7-22 have been added. Claims 7-22 are pending for examination.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7, 12, 17 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ugon (U.S. Patent No. 5,944,833) in view of Cohen "Operating System Protection Through Program Evolution", Computer & Security, 12 (1993) October No. 6, Oxford, GB.

In respect to claim 7, Ugon discloses a method for providing security to a chaining of useful operations, of a same type, performed by an electronic circuit executing an algorithm, each of the useful operations corresponding to a step of the algorithm (e.g. col. 1, line 8-col. 3, line 15). Ugon does not explicitly disclose but Cohen discloses the method comprising randomly introducing at least one dummy

Art Unit: 2134

operation of the same type in the chaining of useful operation (Cohen, pages 571, section 2.7, Garbage Insertion). It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate Ugon's teaching of preventing observation of the running of a program in a microprocessor of an integrated circuit with the teaching of inserting sequences of instruction that are independent of the in-line sequence can be inserted into the sequence without altering the effective program sequence execution taught by Cohen to complicate the process of attacker's analysis (Cohen, page 571, 4th paragraph).

In respect to claims 12 and 17, the claim limitations are substantially similar to claims 7. Therefore, claims 12 and 17 are rejected based on the similar rationale.

In respect to claim 22, Ugon and Cohn discloses an electronic device according to Claim 17, wherein the electronic device is configured as a chip card (Ugon, Abstract).

3. Claims 8-11, 13-16 and 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ugon (U.S. Patent No. 5,944,833) in view of Cohen "Operating System Protection Through Program Evolution", Computer & Security, 12 (1993) October No. 6, Oxford, GB and further in view of Griffin (EP 0448,262 A2).

In respect to claims 8-11, Ugon and Cohen disclose the method according to Claim 7 but does not explicitly disclose further comprising maintaining a constant time interval between execution of two successive useful operations; maintaining a constant time interval between execution of two successive dummy operations; maintaining a constant time interval between execution of two successive useful and dummy operations; wherein a number of dummy operations is constant for each new execution of the algorithm. However, Griffin discloses that if an instruction for a load delay subroutine that indicates the amount of delay in an interim routine and the instruction for the tamper detect subroutine don't have exactly the same cycle lengths, then the load delay subroutine can be distinguished from the tamper detect subroutine by providing a series of reset interrupts and observations of when each reset interrupt is processed (Griffin, col. 6, lines 38-52). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Ugon and Cohen for preventing attack observation of the running of a program in a microprocessor of an integrated circuit with Griffin's teaching of providing the same duration between instructions to prevent subroutines from being distinguished from one another.

In respect to claims 13-16 and 18-21, the claim limitations are device claims that are substantially similar to method claims 8-11. Therefore, claims 13-16 and 18-21 are rejected based on the similar rationale.

Conclusion


4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

-Sprunk discloses clock frequency modulation for secure microprocessors.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tongoc Tran whose telephone number is (571) 272-3843. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Morse can be reached on (571) 272-3838. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Examiner: Tongoc Tran
Art Unit: 2134

September 23, 2005


GREGORY MORSE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

Application/Control Number: 09/914,172
Art Unit: 2134

Page 6